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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,987	09/29/2000	Joshua I. Pine	00CXT0422i	2945

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EXAMINER	
AGGARWAL, YOGESH K	
ART UNIT	**PAPER NUMBER**
2615	

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/672,987	PINE, JOSHUA I.	
	Examiner	Art Unit	
	Yogesh K. Aggarwal	2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5,6 and 25-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5,6,25-31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 08/23/2005 has been entered.

Response to Arguments

2. Applicant's arguments filed 08/23/2005 have been fully considered but they are not persuasive.

Examiner's response:

3. Applicant argues with regards to claim 5 that Palcic discloses that if CCD sensor 12 is in low resolution mode, the light sensitivity of CCD sensor 12 can be increased to acquire the image, and if CCD sensor 12 is in high resolution mode, the light sensitivity of CCD sensor 12 can be decreased to acquire the image. However, Palcic does not come close to disclosing, teaching or suggesting that "in response to detecting the low incident light condition, the image processor switches from the full-resolution mode to the low-resolution mode of the circuit and captures the image using the low-resolution mode of the circuit." In contrast, Palcic simply discloses that the lighting condition is adjusted in each mode, but falls completely short of teaching or suggesting that the lighting condition is used to switch from the low resolution mode to the high resolution mode. The Examiner respectfully disagrees.

Palcic teaches in col. 4 lines 6-11 and col. 9 lines 8-14 an image sensing means (CCD 12) for detecting tissue fluorescence (low or high fluorescent light intensities) and having a light

sensitivity that can be increased to acquire low resolution images at low light intensities. Figure 5 more clearly shows the controller (image processor) that is used for binning the pixels (combining the pixels together) that decreases spatial resolution and therefore provides an image of low resolution (col. 9 lines 15-23). Palcic also teaches in another embodiment (col. 9 lines 39-52)

Filter module 16 is selected to filter out the blue band excitation light such that only the **fluorescence green and longer wavelengths (e.g. greater than 480 nm) are collected by the CCD sensor**. Since abnormal tissue has greatly diminished (or a lack of) fluorescence particulary in the green region, **the abnormal tissue will be detected as a darker area on the image captured by the CCD sensor.** The darker abnormal regions of tissue will be readily apparent on display monitor 18. **The light sensitivity of the CCD sensor can be increased by binning to acquire low resolution images at low fluorescent light intensities**. While the images are of reduced resolution, they are generally sufficiently detailed to accurately determine the extent and location of the diseased tissue.

Therefore Palcic clearly teaches decreasing resolution (binning pixels by an image processor shown in figure 5) at low fluorescent light intensities and hence the claimed limitation "in response to detecting the low incident light condition, the image processor switches from the full-resolution mode to the low-resolution mode of the circuit and captures the image using the low-resolution mode of the circuit".

4. Applicant argues neither Palcic nor Wilder suggests the desirability of combining the two references, such that in response to detecting the low incident light condition, the image processor switches from the full-resolution mode to the low-resolution mode. The Examiner respectfully disagrees. Palcic provides explicit motivation for having a low resolution image taken at low light intensities for the advantage of having the light sensitivity increased by binning the pixels that decreases the spatial resolution and thus providing more light per pixel (col. 9 lines 8-23).

Applicant argues with regards to claim 24 that there is no teaching or suggestion by either reference, whatsoever, to combine Anderson and Kuroiwa with Wilder, as described by the Examiner. The Examiner respectfully disagrees. As clearly mentioned in the previous office action, Anderson explicitly teaches a system and method for managing utilization of a battery and a voltage sensor 76 (figure 3) for monitoring the power source's 74 voltage (col. 5 lines 64-66). Upon detecting that the power source voltage has fallen below a predetermined threshold, the voltage sensor 76 generates a signal to the PMH 70. Upon receiving the signal from the voltage sensor, PMH 70 immediately commands the flash unit 66 to no longer consume any power (col. 5 line 67-col. 6 line 31). The motivation of doing so is explicitly mentioned in the Anderson i.e. in order to maximize the power supply's usable life by compensating the effects of power supply degradation thus optimizing camera performance (col. 2 lines 42-47).

Kuroiwa has been expressly used for teaching the claimed limitation "and if so, captures the image using the low-resolution mode of the circuit" which teaches that the reduction in resolution is achieved as a result of sub-sampling in order to make it easy to reduce the power consumption (Paragraph 188). The motivation of doing so is explicitly mentioned in the Kuroiwa i.e. by reducing the resolution, it will make advantageous or easier to reduce the power consumption (Paragraph 188).

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 25, 27 and 30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The recited claimed limitation " and wherein a frequency of the pulse determines a resolution reduction of the image" is not described in the specification.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 5, 25 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US Patent # 5,262,871) in view of Palcic et al. (US Patent # 5,827,190).

[Claim 5]

Wilder et al. teaches a selectable resolution image capture system (col. 5 line 65-col. 6 line 7) comprising an imager (figure 2, element 10) having a plurality of photocells that produce an analog electrical response to light exposure (col. 5 lines 25-31), a circuit (18) that converts the electrical responses of the plurality of photocells into digital signals (col. 1 line 14-20), the circuit having a full-resolution mode and a low-resolution mode and an image processor (18) that operates the circuit and selects between the full-resolution and low-resolution modes of the circuit to capture an image (col. 5 line 66- col. 6 line 64) except the image processor detecting a low light condition, and if so, captures the image using the low-resolution mode of the circuit.

Wilder et al. does not explicitly teach detecting a low incident light condition, and in response to detecting the low incident light condition, the image processor switches from the full-resolution mode to the low-resolution mode of the circuit and captures the image using the low-resolution mode of the circuit.

However Palcic et al. teaches in figure 2 a light source 30 used to illuminate the tissue 42 and the reflected light is incident upon the CCD to the optical means in the form of CCD cameras 34 and 36 (col. 5 lines 50-54). Palcic et al. further teaches that this incident light from the tissue is detected as tissue fluorescence as an incident light condition ("light falling upon the CCD" or incident upon the CCD) and if a tissue image is at low florescent light conditions the light sensitivity can be increased to acquire low-resolution image (col. 4 lines 6-11). Figure 5 more clearly shows the controller (image processor) that is used for binning the pixels (combining the pixels together) that decreases spatial resolution and therefore provides an image of low resolution (col. 9 lines 15-23). Palcic also teaches in another embodiment (col. 9 lines 39-52). Palcic also teaches in another embodiment (col. 9 lines 39-52)

Filter module 16 is selected to filter out the blue band excitation light such that only the **fluorescence green and longer wavelengths (e.g. greater than 480 nm) are collected by the CCD sensor**. Since abnormal tissue has greatly diminished (or a lack of) fluorescence particulary in the green region, **the abnormal tissue will be detected as a darker area on the image captured by the CCD sensor.** The darker abnormal regions of tissue will be readily apparent on display monitor 18. **The light sensitivity of the CCD sensor can be increased by binning to acquire low resolution images at low fluorescent light intensities**. While the images are of reduced resolution, they are generally sufficiently detailed to accurately determine the extent and location of the diseased tissue.

Therefore Palcic clearly teaches decreasing resolution (binning pixels by an image processor shown in figure 5) at low fluorescent light intensities and hence the claimed limitation "in response to detecting the low incident light condition, the image processor switches from the

full-resolution mode to the low-resolution mode of the circuit and captures the image using the low-resolution mode of the circuit".

Therefore taking the combined teachings of Wilder and Palcic, it would have been obvious to one skilled in the art at the time of the invention to have been motivated to incorporate detecting a low light condition, and in response to detecting the low incident light condition, the image processor switches from the full-resolution mode to the low-resolution mode of the circuit and captures the image using the low-resolution mode of the circuit. The benefit of doing so will increase the sensitivity of the image sensor as two or more pixels are combined to generate more light per pixel as taught in Palcic (col. 4 lines 8-11).

[Claim 25]

Wilder teaches a row decoder (figure2, element 12) and a column decoder (21) that generate pulses to cause more than one element of a row or column to be selected at a time (col. 6 lines 30-39). Wilder fails to teach a bayer pattern that causes at least two colors to be selected and wherein a frequency of the pulse determines a resolution of the image. However Official Notice is taken of the fact that having a Bayer pattern that causes at least two colors to be selected wherein a frequency of the pulse determines a resolution reduction of the image in order to have half of the pixels as green to which human eye is most sensitive.

Therefore taking the combined teachings of Wilder, Palcic and Official Notice, it would be obvious to one skilled in the art to have been motivate to have a bayer pattern that causes at least two colors to be selected and wherein a frequency of the pulse determines a resolution of the image in order to have half of the pixels as green to which human eye is most sensitive.

[Claims 29, 30]

Claims 29 and 30 are method claims corresponding to apparatus claims 5 and 25. Therefore they have been analyzed and rejected based upon apparatus claims 5 and 25 respectively.

9. Claims 6 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wilder et al. (US Patent # 5,262,871), Anderson et al. (US Patent # 6,233,016) and in further view of Kuroiwa (US PG-PUB # 2001/0017658).

[Claim 6]

Wilder et al. teaches a selectable resolution image capture system (col. 5 line 65-col. 6 line 7) comprising an imager (figure 2, element 10) having a plurality of photocells that produce an analog electrical response to light exposure (col. 5 lines 25-31), a circuit (18) that converts the electrical responses of the plurality of photocells into digital signals (col. 1 line 14-20), the circuit having a full-resolution mode and a low-resolution mode and an image processor (18) that operates the circuit and selects between the full-resolution and low-resolution modes of the circuit to capture an image (col. 5 line 66- col. 6 line 64) except the image processor detecting a low power condition, and if so, captures the image using the low-resolution mode of the circuit.

Wilder et al. does not explicitly teach detecting a low power condition. However Anderson et al. teaches a system and method for managing utilization of a battery and a voltage sensor 76 (figure 3) for monitoring the power source's 74 voltage (col. 5 lines 64-66). Upon detecting that the power source voltage has fallen below a predetermined threshold, the voltage sensor 76 generates a signal to the PMH 70. Upon receiving the signal from the voltage sensor 76 the PMH 70 immediately commands the flash unit 66 to no longer consume any power (col. 5 line 67-col. 6 line 31).

Wilder in view of Anderson teach that if a low power condition is detected, part of the circuitry can be made off but does not explicitly teach that during such condition the image processor switches from the full resolution mode to the low resolution mode and captures the image using the low resolution mode of the circuit.

However Kuroiwa teaches that the reduction in resolution is achieved as a result of sub-sampling in order to make it easy to reduce the power consumption (Paragraph 188).

Therefore taking the combined teachings of Wilder, Anderson and Kuroiwa as a whole, it would have been obvious to one skilled in the art to incorporate an image processor which detects whether there is a low power condition as taught by Anderson, and that during such condition the image processor switches from the full resolution mode to the low resolution mode and captures the image using the low resolution mode of the circuit as taught by Kuroiwa into the multiple resolution circuit of Wilder. The benefit of doing so would save an excessive power to be consumed if low-resolution images are taken when low power condition is detected.

[Claim 27]

See Examiner notes regarding rejection of claim 25.

Allowable Subject Matter

10. Claims 26, 28 and 31 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art fails to teach or suggest "a row clock signal operating at a first clock rate; a column clock signal operating at a second clock rate; and a charge accumulator configured to accumulate charges from the selected pixels during first clock

cycles; wherein the image processor increases the first clock rate and the second clock rate during second clock cycles when the charge accumulator is not accumulating charges".

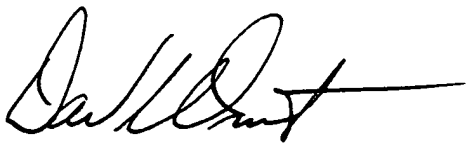
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yogesh K. Aggarwal whose telephone number is (571) 272-7360. The examiner can normally be reached on M-F 9:00AM-5:30PM.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571)-272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

YKA
November 9, 2005



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